

# Debugging your JavaScript

Debugging your  
JavaScript, HTML,  
and CSS

Debugging your  
JavaScript, HTML,  
and CSS on Desktop  
and Mobile

# Making Your Web Stuff Work

# Who am I?

- Raymond Camden  
(raymondcamden.com)
- Senior Developer Evangelist @ Adobe
- @cfjedimaster
- I make bugs for a living

So, um, we have a  
problem

It isn't the bugs

9/9

0800 Arctan started  
 1000 stopped - arctan ✓ { 1. 2700 9.032847 025  
 13<sup>o</sup> 46' 03.1 MP - MC 2. 130476475 (25) 9.032846 945 const  
 033 PRO 2 2. 130476415  
 const 2. 130476415

Relays 6-2 in 033 failed special speed test  
 in relay 10.00 sec.

1100 Started Relay's changed  
 1525 Started Cosine Tape (Sine chart)  
 Started Multi. Adder Test.

1545

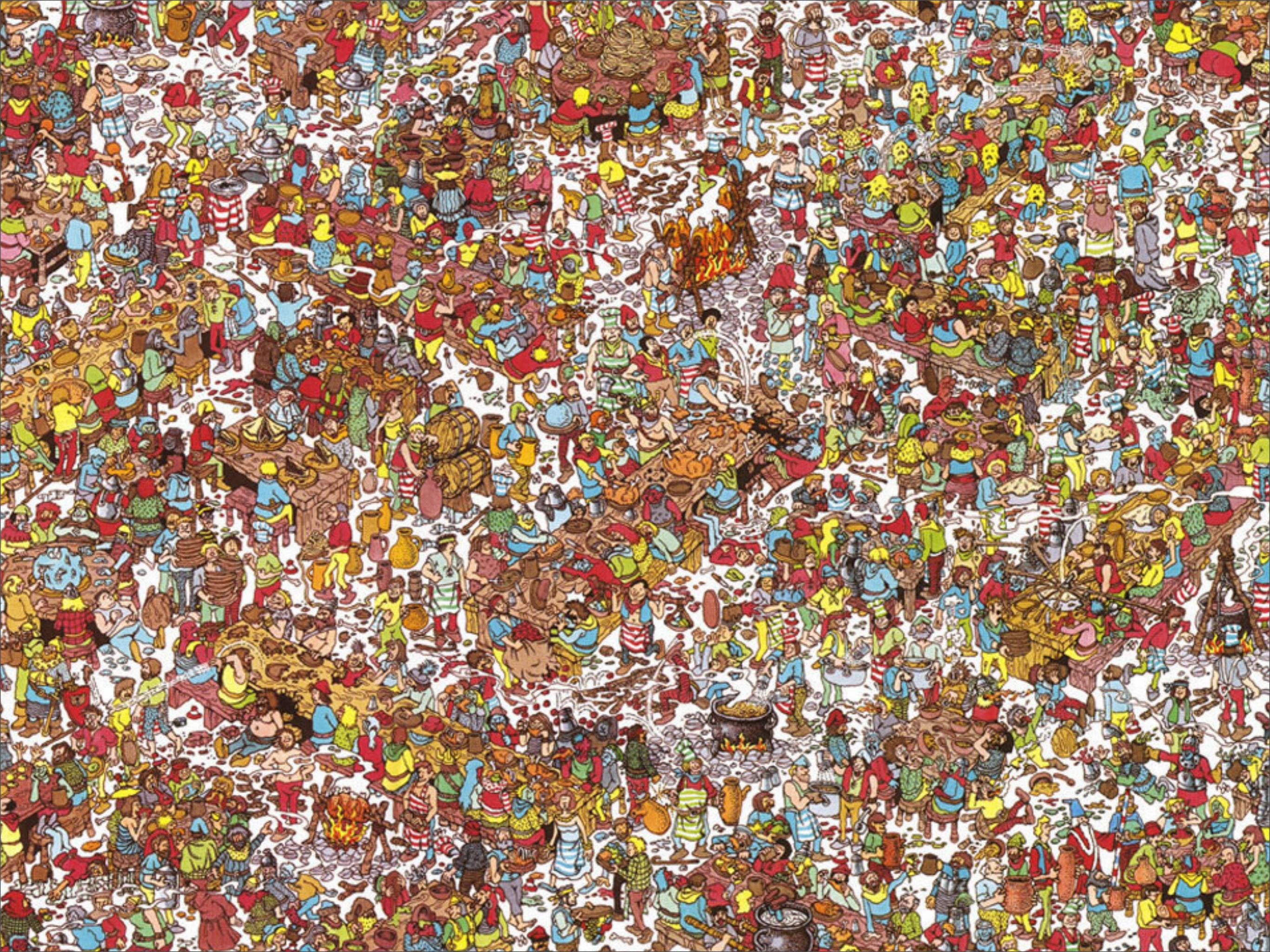


Relay #70 Panel F  
 (moth) in relay.

1625 Arctangent started.  
 1700 closed down.

First actual case of bug being found.

The problem is  
finding the bug



[Download](#)[Demos & Documentation](#)[Themes](#)[Development](#)[Support](#)

SAN FRANCISCO, CALIFORNIA  
JUNE 28 & 29, 2012  
[events.jquery.org](http://events.jquery.org)

#### Interactions

- [Draggable](#)
- [Droppable](#)
- [Resizable](#)
- [Selectable](#)
- [Sortable](#)

#### Widgets

- [Accordion](#)
- [Autocomplete](#)
- [Button](#)
- [Datepicker](#)
- [Dialog](#)
- [Progressbar](#)
- [Slider](#)
- [Tabs](#)

## Autocomplete

Theme: UI lightness ▾

New window

#### Examples

- [Default functionality](#)
- [Remote datasource](#)
- [Remote with caching](#)
- [Remote JSONP datasource](#)
- [Scrollable results](#)
- [Combobox](#)
- [Custom data and display](#)
- [XML data parsed once](#)
- [Categories](#)
- [Accent folding](#)
- [Multiple values](#)
- [Multiple, remote](#)

Tags:

What has to work...

# What has to work...

- JavaScript enabled

# What has to work...

- JavaScript enabled
- jQuery Loaded

# What has to work...

- JavaScript enabled
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- jQuery UI Loaded

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- jQuery UI CSS Loaded

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# What has to work...

- JavaScript enabled
- jQuery Loaded
- jQuery UI Loaded
- jQuery UI CSS Loaded
- Have to select the right DOM for the autocomplete
- Have to ensure your setup options match what the control needs
- Have to ensure your data source (which is probably remote) is working right

# Lots of Opportunities

**WE SHALL DECIDE**



**YOUR LEVEL OF FAIL**

The First  
Bug  
is one you  
probably don't  
know you have



# Can you spot the bug?

Myspace | Social Entertainment

myspace Sign up Login Search People Music Video Games Browse People

http://www.myspace.com/ Google

Enter today with an existing YouTube video link, for a chance to win up to \$25,000 and open for a National Act!

2011 WAS BIG NATIONAL ACTS INCLUDED: PLAIN WHITE T'S

FANS CAN ENTER FOR A CHANCE TO WIN AWESOME DRIVES

Charter CENTER STAGE BATTLE OF THE BANDS

CHARTER INTERNET SPEEDS UP TO 30 MBPS \$29.99/mo for 12 mos LEARN MORE

Restrictions apply.

MYSPACE MUSIC PLAYER LAUNCH ▾

TOP HIP HOP PLAYLIST Chris Brown & Usher get along on this playlist WATCH ▶

SEEKING A FRIEND FOR THE END OF THE WORLD 'Who's More Likely To' with Steve Carell, Keira Knightley & the cast WATCH ▶

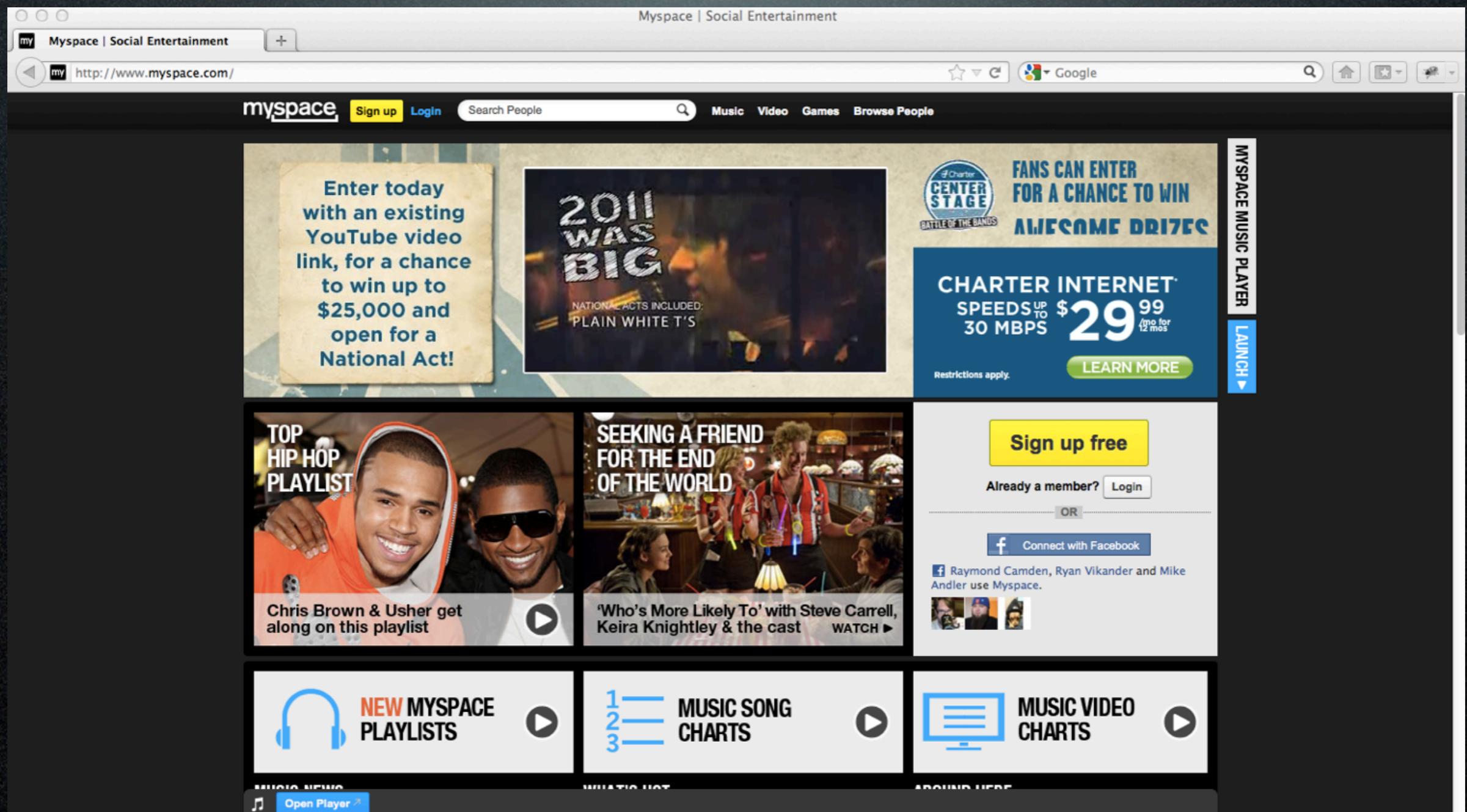
Sign up free Already a member? Login OR Connect with Facebook Raymond Camden, Ryan Vikander and Mike Andler use Myspace.

NEW MYSPACE PLAYLISTS

1 2 3 MUSIC SONG CHARTS

MUSIC VIDEO CHARTS

MUSIC NEWS Open Player ▶ WHAT'S HOT AROUND HERE



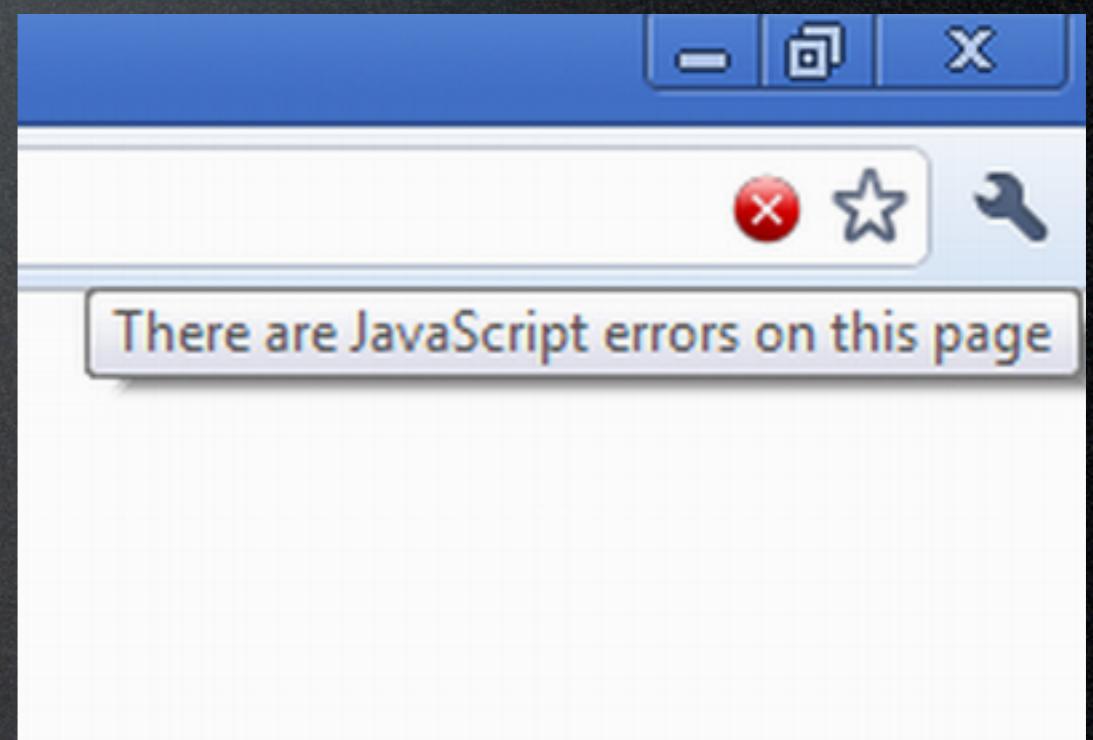


# Being Proactive

- Checking the tools we're going to cover later
- Unit Testing

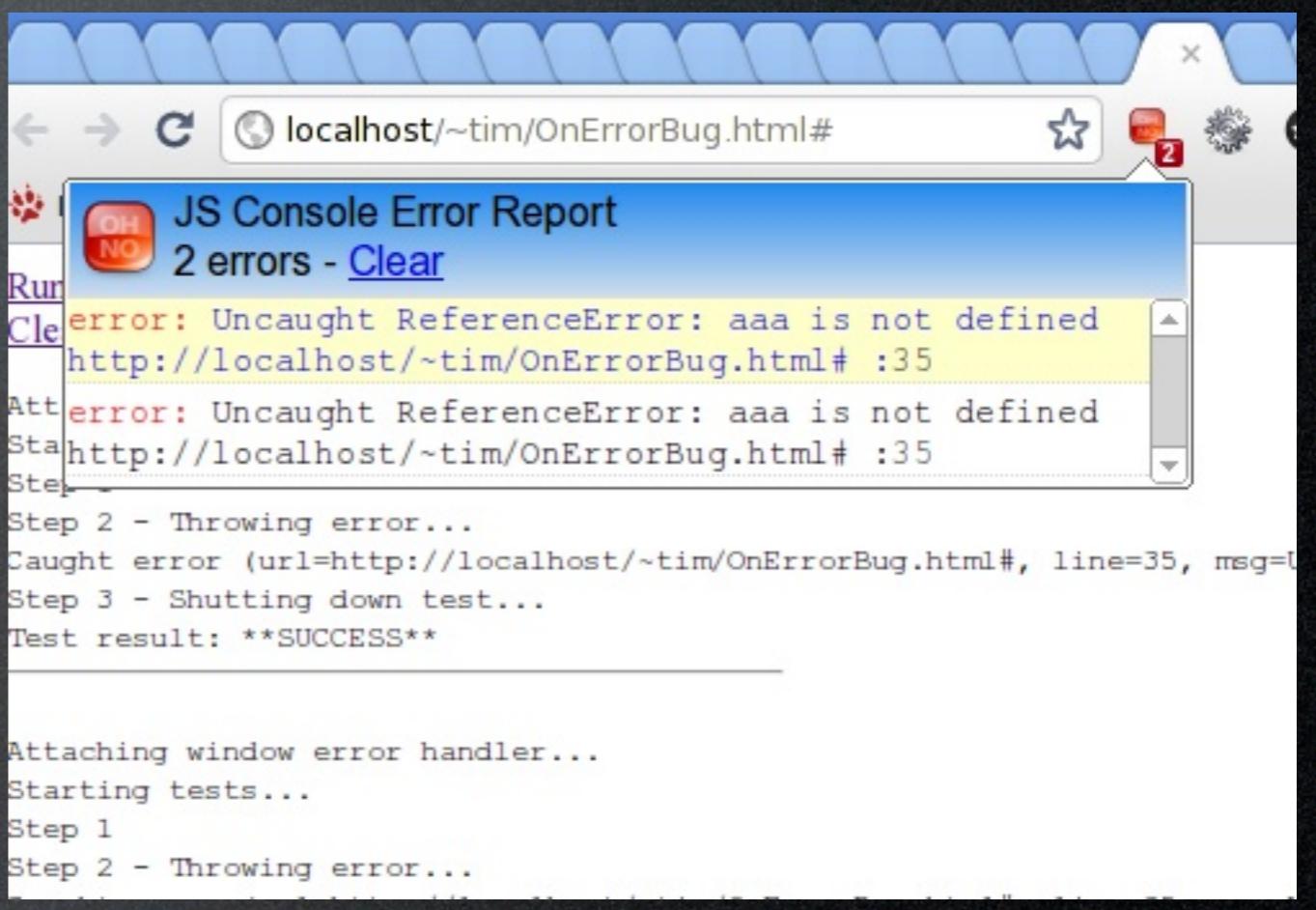
# Chrome Extensions

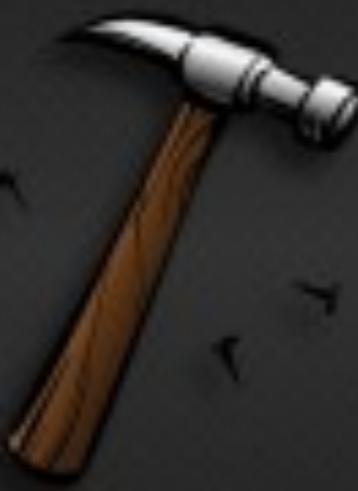
- javascript-error-notifier
- <http://code.google.com/p/javascript-error-notifier/>



# Chrome Extensions

- jsError
- <https://github.com/schm erg/JsError>





# {errorception}

- <http://errorception.com/>
- 30 day trial
- \$5 plan that reports up to 500 errors
- Works via simple embed

# {errorception}

## Showing all errors

### Access is denied.

On line 18 of <https://apis.google.com/js/plusone.js> on 139 different pages.

 255 occurrences this week

 Seen in 2 different versions of Internet Explorer. Last seen 3 minutes ago. Occurred 255 times so far. Occurred before page load.

### Отказано в доступе.

On line 18 of <https://apis.google.com/js/plusone.js> on 2 different pages.

 2 occurrences this week

 Seen in Internet Explorer 9. Last seen 33 minutes ago. Occurred 2 times so far. Occurred before page load.

### window.frames.print\_frame\_D1897B91BF2BEB0CBCEDA700AAF476C4 is...

 1 occurrence this week

In an inline script on <http://www.raymondcamden.com/index.cfm/2011/4/5/Collapsible-content>...

 Seen in Firefox 13. Last seen 3 hours ago. Occurred once so far. Occurred after page load.

### Accès refusé.

 14 occurrences this week

On line 18 of <https://apis.google.com/js/plusone.js> on 11 different pages.

 Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred 14 times so far. Occurred before page load.

### הגישה נדחתה.

 1 occurrence this week

On line 18 of <https://apis.google.com/js/plusone.js> on 1 page.

 Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred once so far. Occurred before page load.

### Åtkomst nekad.

 2 occurrences this week

On line 18 of <https://apis.google.com/js/plusone.js> on 2 different pages.

 Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred 2 times so far. Occurred before page load.

### Toegang geweigerd.

 8 occurrences this week

On line 18 of <https://apis.google.com/js/plusone.js> on 6 different pages.

# Access is denied.

Where

[Line 18 in https://apis.google.com/js/plusone.js](#)

Note: Line numbers may not be too useful in IE. Curse it!

Browsers

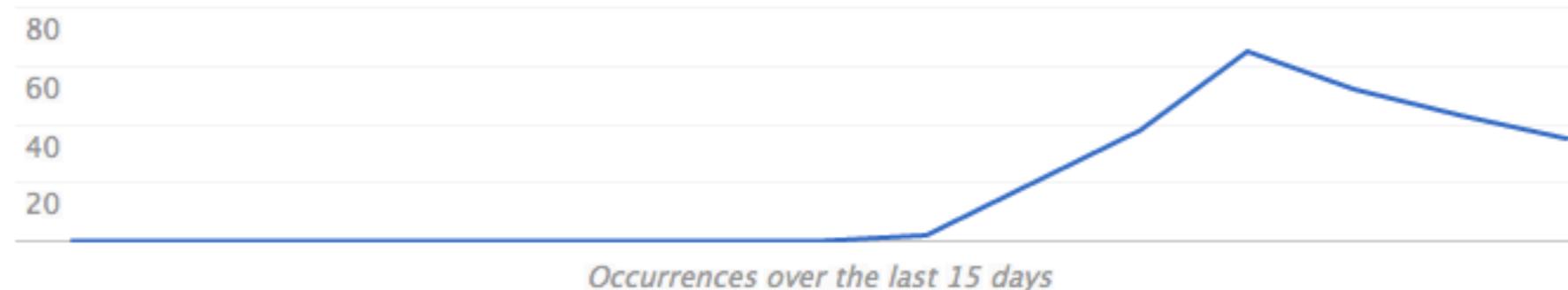


When

Before page load

Occurrences

255 total occurrences. First seen 6 days ago. Last seen 5 minutes ago.



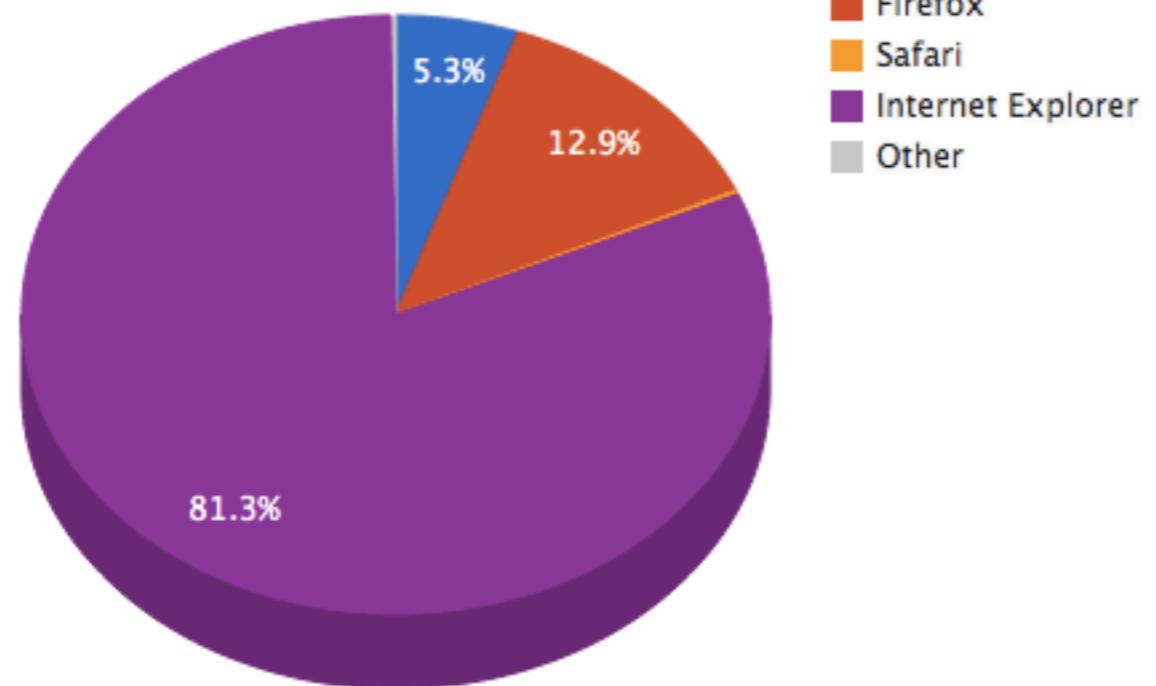
On pages

<http://www.raymondcamden.com/index.cfm/2011/4/3/Example-of-jQuery-Mobile-...>  
<http://www.raymondcamden.com/index.cfm/2011/3/9/Adding-driving-directions-t...>  
<http://www.raymondcamden.com/index.cfm/2012/1/19/Downloading-files-to-a-Ph...>  
<http://www.raymondcamden.com/index.cfm/2009/2/10/An-Introduction-to-jQuery...>  
<http://www.raymondcamden.com/index.cfm/2007/7/26/Getting-a-page-from-a-P...>  
<http://www.raymondcamden.com/index.cfm/2012/6/11/ColdFusion-Developer-Wee...>  
<http://www.raymondcamden.com/index.cfm/2009/11/17/Looking-For-Writing-Cold...>  
<http://www.raymondcamden.com/index.cfm/2009/2/9/An-introduction-to-jQuery-...>

# Graphs



# Browsers



- Chrome
- Firefox
- Safari
- Internet Explorer
- Other

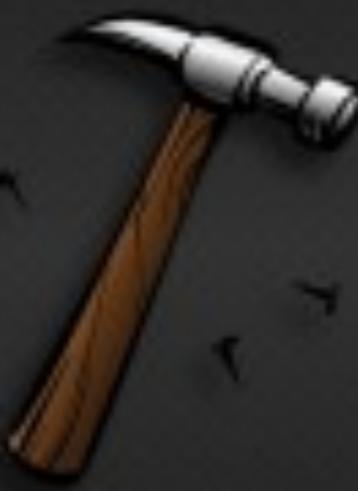
Browsers	Errors
Internet Explorer	993
Firefox	157
Chrome	65
Safari	3
Chromium	1
iPad	1
RockMelt	1
Total	1221

# You've got a bug, now what?

- Learn your browser tools
- It doesn't necessarily matter if it's not your standard browser
- And guess what - you can use more than one (really)

# Chrome Dev Tools

- Wrench -> Tools -> Developer Tools
- Keyboard combo
- Run at bottom, right, detached



# What we care about...

- Console
- Network
- Elements
- Scripts/Sources
- Resources

# Console

- Errors show up here
- You can run commands here as well as code in your page
- You can view log messages here

# console API

- Your code can send messages to the console
- I use the heck out of this
- No, really, I make logs like a lumberjack

# console API

- [http://getfirebug.com/wiki/index.php/  
Console\\_API](http://getfirebug.com/wiki/index.php/Console_API)
- **log**, error, warn, info, count, debug,  
profileend, trace, dir, dirxml, assert,  
time, profile, timeEnd, group,  
groupEnd

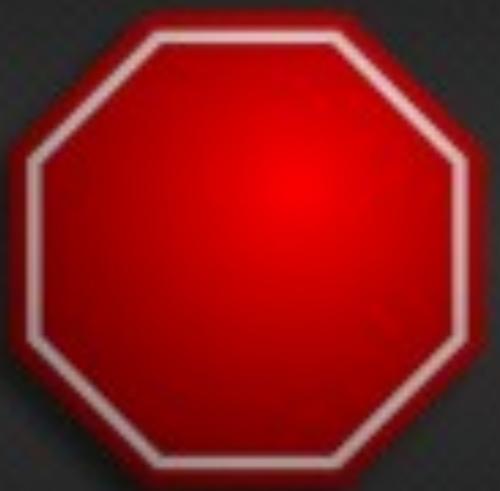
# console.log

- `console.log("this works");`
- `console.log("What is X "+x);`
- `console.log("X",x);`
- `console.log(object);`



# console.dir

- Dumps an object
- Great for introspecting remote data
- Firebug does it nicer (a bit)



# Network Requests

- Check the output
- Check **all** the output
- Look for things like redirects on session timeout
- JSON/P is a bit different



# Elements

- Handy for looking at your DOM
- Which may be dynamic (ColdFusion, Ruby, PHP, etc)
- Which may be dynamic (JavaScript)

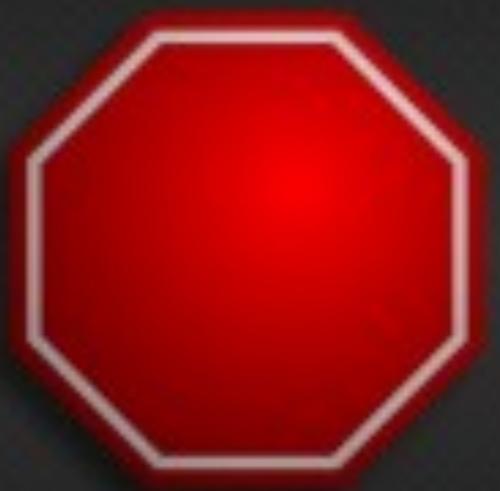


# Scripts/Sources

- List of all the scripts on your page
- This is your debugger
- (p.s. note the stop on error magic trick)

# Debugger Key Terms

- Breakpoints
  - Specific
  - Dynamic
  - DOM Change, XHR, Events
- Stepping
  - Multiple ways to progress



# Resources

- Cookies, Databases, IndexedDB, Local (and Session) Storage, Application Cache
- As well as HTML, JS, CSS

The State of Mobile



Desktop is Awesome!

Mobile has “opportunity to grow”



First rule of mobile testing -  
don't test on mobile!



# Testing on Desktop

- PRO: Much, much, much quicker
- CON: Network access
- CON: Hardware access
- CON: Look and feel

# CON: Network Access

- You're AJAX code can't open URLs on remote servers
- Chrome makes this easy:
  - `open -a /Applications/Chrome\ Dev/ Google\ Chrome.app --args --allow-file-access-from-files --disable-web-security`
- JSON/P and CORS

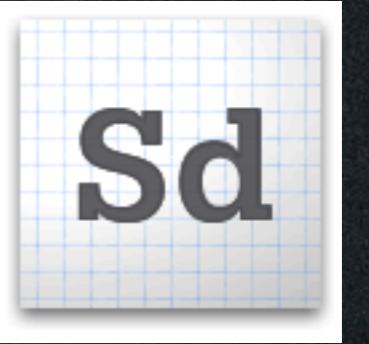
# CON: Hardware Access

- onDeviceReady
- Trust the Gap

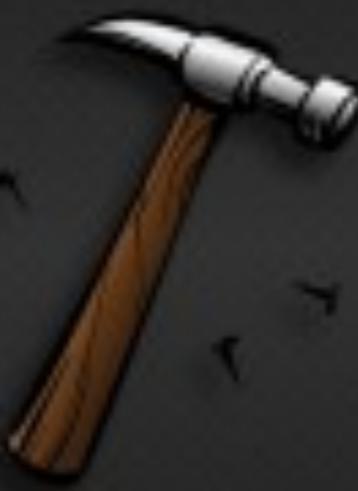
# CON: Look and feel

- Use a UI framework like jQuery Mobile
- Use....

# Adobe Shadow



- Syncs your desktop and mobile devices
- Takes screenshots, handles caches
- Made with pure Awesome-sauce



# Testing on Device

- You must do this.
- See the bullet point above.

# Options?

- Shadow, again
- Weinre ([debug.phonegap.com](http://debug.phonegap.com))
- Console FTW

# The Last Resort



# OVERCONFIDENCE

This is going to end in disaster, and you have no one to blame but yourself.

# Questions?

- You can email me here:  
[raymondcamden@gmail.com](mailto:raymondcamden@gmail.com)
- You can view my blog here:  
[raymondcamden.com](http://raymondcamden.com)